



In Albuquerque, letter carrier Kathy Romero wheels a cart piled high with day's mail to her waiting van.

By Jake Page

One in 500 million: tracking a letter across the country

A curious postal patron follows his own letter from Virginia to New Mexico and finds there's still no substitute for the human eye and hand

THE MERCEDES-BENZ 300 CLASS: ITS TECHNOLOGY MAY BOGGLE THE MIND, BUT THE SOUL UNDERSTANDS IMMEDIATELY.

The engineers of Mercedes-Benz have long been noted for their uncanny ability to turn remote technical exercises into rewarding automotive experiences.

With the 300 Class, Mercedes-Benz engineers have done nothing less than turn the theoretical into the phenomenal. Distilling esoteric technology into what one automotive journal calls "a mechanical symphony." Creating an automobile of sublime driving pleasure.

An automobile whose electro-mechanically controlled six-cylinder engine produces robust power—177 horsepower in three-liter form. Power so smooth that even at test-track velocities, the engine's exertions can barely be felt.

Other advanced engineering concepts produce further refinements of the classic Mercedes-Benz driving character. A multilink independent rear suspension system preserves near-perfect geometry between tire and road, resulting in a ride that *Car and Driver* terms "nothing short of magical." While the same journal reports handling prowess so inspiring that "you can charge unfamiliar territory as though you were on your daily route to work."

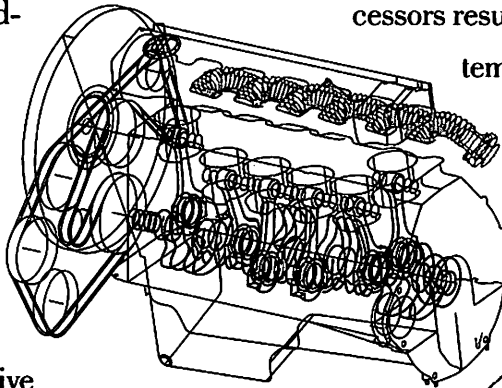
Advanced aerodynamics have shaped a 300 Class sedan body that cuts drag to a slippery

0.31 Cd—and wind noise at cruising speed to near silence. The advanced application of microprocessors results in an Anti-lock Braking Sys-

tem that modulates braking pressure up to 15 times per second in sudden hard stops, preventing skidding and preserving steering control.

And advanced technology addresses the concern for occupant safety: microprocessors in the Supplemental Restraint System are primed to deploy a driver's-side air bag and front seat belt emergency tensioning retractors within *milliseconds* of a major frontal impact.

In their pursuit of a superbly capable automobile, the engineers of Mercedes-Benz have created one of the most sophisticated production cars ever built. But you need not be an automotive engineer to appreciate their achievement. You need only drive any one of the 300 Class automobiles: 260 E and 300 E Sedans, 300 CE Coupe and 300 TE Station Wagon. You—and your soul—will understand immediately.



Engineered like no other car in the world



It will take her six hours to deliver 3,000 pieces of mail to the 492 stops along her ten-mile route.

My post office consists of three rented rooms in an early 19th-century building in the center of town, the town being a place of fewer than a hundred families, five businesses and no street addresses. There are about 160 mailboxes along the outlying rural roads and that completes this Northern Virginia ZIP Code. Small potatoes.

In the public room of the post office are a wooden bench, two metal wastebaskets and two walls of brass mailboxes with little windows and combination locks. The locks are worn down by several generations of twirling and they sometimes get cranky—at least mine does occasionally, requiring a retwirling or two before

it lets me in. It is here at about 9:45 in the morning six days a week that I ritually go to see what the rest of the world has sent me.

Sometimes there isn't much in there—a few forlorn appeals, perhaps, or a cheerful newsletter from my congressman. Other days, the box can be a cornucopia—magazines, news from children and friends, maybe even a check. I am lucky: only once in eight years was there nothing in my mailbox. That day, of the 500 million pieces of mail that reached their destinations in the United States of America, none came my way. Nothing. I went home and wrote eight letters in a panicky effort to reconnect myself to the world.

Sifting junk mail for pleasure and profit

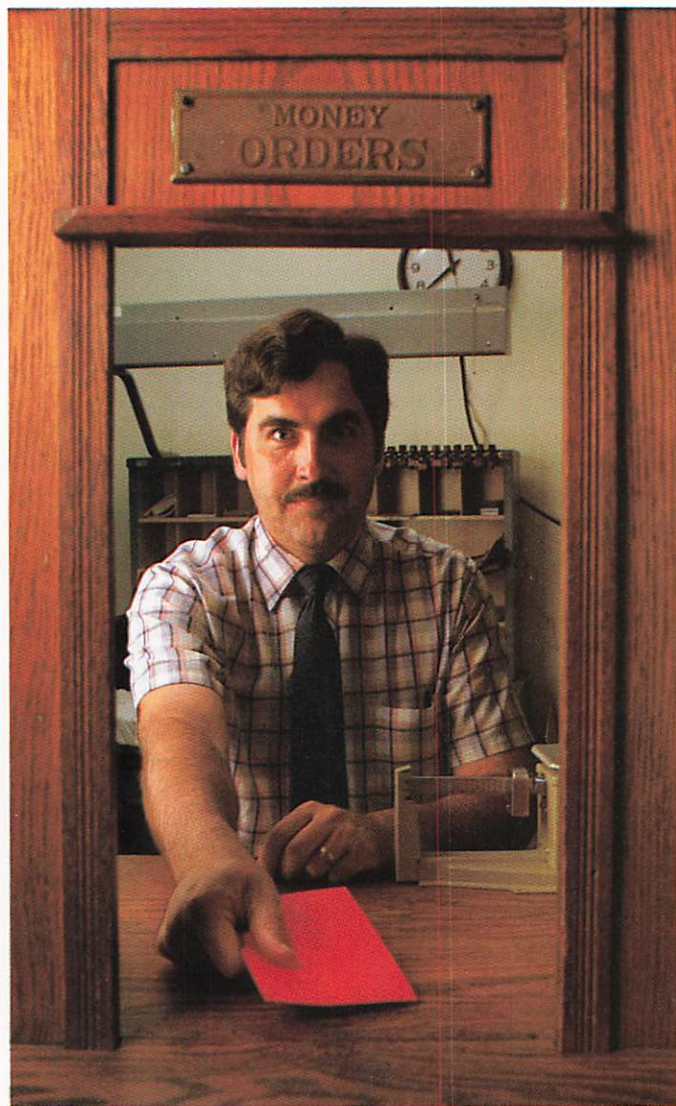
People tend to take their mail—and even their mailboxes—personally. Many find their privacy somehow invaded by the sheaves of direct-mail appeals that regularly arrive unasked. I happen to be a fan of what so many people disparagingly refer to as junk mail. It is perfectly easy to throw away, after all, and it is often amusing, depending on one's mood. The arrival of a catalog of arcane tools sets my mind to work, dreaming of arcane projects that would fit the tools. The tools are rarely ordered, the projects rarely done—but dreams are important. I hear about new books, new bird feeders guaranteed to be squirrel-proof, and exciting possibilities in investments and real estate. Like most of its readers, I subscribed to SMITHSONIAN by virtue of a piece of direct mail. Still, many people grumble about such arrivals, although no one I've ever heard of blames this on the typically friendly clerk who puts your mail in your personal box. Conversely, we all assume that there are conveniently located letter carriers who, with similar attentiveness, deliver the letter we write. Without thinking about it much, we imagine brigades of people in between, moving "our" mail along its prescribed course, faithfully heeding such imprecations as FRAGILE or DO NOT BEND, and presciently decoding our handwriting.

But when the system breaks down—when, for example, a letter takes too many days to arrive—all those people in between turn immediately into gnomes inhabiting dark rooms, some listlessly dropping our letters on the floor while others operate clever package-mangling machines, pausing only to giggle at the inanity of the messages we wrote on postcards. Could this be?

So one day I wrote a letter to a friend in Albuquerque. The experimental letter might have been sent to some remote town in Alaska, possibly involving dog sleds at the other end, or some other fearfully difficult destination requiring heroic actions, but that was not the point. I wanted to see what happened to an ordi-

Photographs by Cameron Davidson

Tracking a letter across the country



Postmaster Norris Beavers of Waterford, Virginia, receives the author's "red letter" for Albuquerque.

nary letter going to a normal place (although I understand that many people in the United States don't know that New Mexico is part of this nation). I carefully typed the address and ZIP Code and affixed a stamp. At about 4:30 in the afternoon, I took the letter down to the post office and gave it to Norris Beavers (below), our postmaster and the only full-time employee in the place. Norris is aided by Betty Hutchison several days a week, and on Saturdays—Norris' day off—she acts as postmaster. Yes, postmaster, not postmistress. Women who serve in this capacity are masters, I had found. By this time I had also found that Norris was one of 28,000 postmasters and that the U.S. Postal Service's brigades number 633,387 (with part-timers and temporaries, 800,000), making it the nation's largest civilian employer, ahead of General Motors and other behemoths. As well, I knew that my friend's mailbox in Albuquerque was one of the 96 million in this country to which on any given day the mail must be delivered.

Bemused by the odds, I told Norris that I was curious about what would happen to my letter during its voyage and, an affable man, he invited me into the back room, which for eight years I had only glimpsed through the customer-service windows. He cautioned me that it would be inappropriate to look too closely into my neighbors' mail slots.

"The mail is privileged," he said.

This, then, is the tale of my letter—for these purposes, a kind of Everyletter.

Behind the scenes in a country post office

Norris glanced at the ZIP Code and told me that it would take three days to get there. Overnight service is standard for any place within about a hundred miles. East of the Mississippi takes two days; farther west is targeted for three-day delivery. Along with a handful of other envelopes, Norris ran my letter through a device that looks like an antique sewing machine, made long ago, but made no longer, by Pitney-Bowes: the Universal Canceling Machine.

Everyletter joined others in a two-foot-long cardboard tray which bore a label that said DIS No Va 220 (its intermediate destination) and FCM (its identity—first-class mail). In the next half-hour, Norris canceled more late-arriving mail; put it into appropriate trays, boxes and bags; took down the American flag outside the post office; filled out the day's bank deposit; discussed the exigencies of the state motor-vehicle department with an evidently oppressed citizen of the town; and at 5:05 opened the door for two men who hauled all the outgoing mail to a van and drove it to a larger post office in the county seat four miles away.

By this time, Everyletter was as indistinguishable to a casual observer as a drop of water in a small stream.

Once in the post office at the county seat, it intermingled with yet other mail from other outlying towns and from there it all went to DIS No Va 220, which is shorthand for the Northern Virginia Management Sectional Center, located about an hour away in a place called Merrifield. The center houses a standard post office but it is chiefly devoted to processing the region's mail—about five million pieces a day. The building takes up six acres and is fed by 86 local post offices and about 1,600 other collection points. In addition, it regurgitates mail to nearly two million people in the region at a half-million delivery points, not to mention mail headed for such places as Albuquerque.

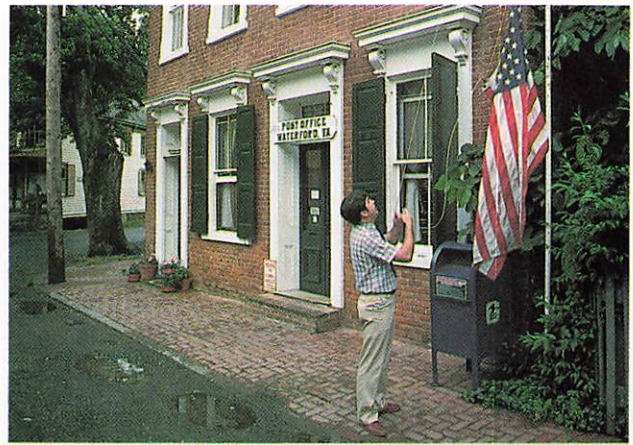
The tributary that included Everyletter arrived at Merrifield at approximately 6:30 P.M., along with most of the rest of the area's mail. Meantime, mail from outside the region was also coming in. The center, thus, must act like an enormous heart, taking in and pushing out all the region's mail as well as absorbing and sending forth all the mail arriving from elsewhere. An endless pulsating.

The mayhem would have pleased Dante

Inside the building there was seeming chaos: bags and bags of mail being dumped here and there; avalanches of odd-sized packages; rows of dollies loaded with magazines; a phantasmagoria of ramps and tracks of spinning rollers, unsorted letters flopping along, with robotic rubber disks flipping and separating them; hordes of men and women pushing carts and gurneys, dumping bags, hovering over the cascades of mail as they whisked past—and a great noise of people and machinery. Everyletter was quite obviously lost. It was mayhem, pure and simple: Dante would have reveled.

My guide, Jim Gillespie, explained to me what was happening. My letter had already avoided one fate, thanks to the fact that Norris had run it through his Universal Canceling Machine. Had he not done so, Everyletter would have been fed into the maw of a machine that "faces" letters and then cancels them. This machine looks at each envelope that goes through—at a rate of 30,000 per hour—and seeks out the stamp. If it doesn't find the stamp, the envelope is automatically turned over or around until it faces the right way and the stamp can be seen (the machine sees it because the stamp is phosphorescent).

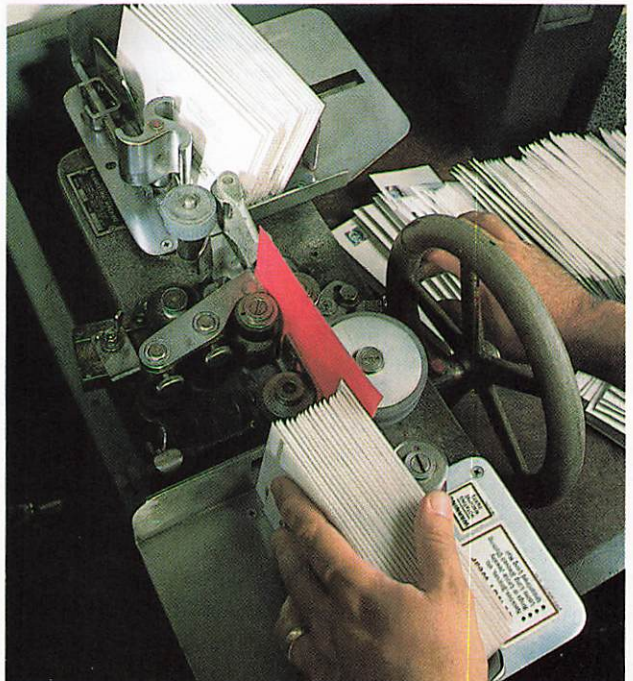
In the Postal Service, they think of a stamp as a sandwich, the ingredients of which are paper, glue, ink, varnish and a phosphorescent substance. They sell about 35 billion of these sandwiches a year, sufficient to circle the Earth 22 times. Lately, thanks to research carried out at the Postal Service's Engineering Support Center next door at Merrifield, they are mixing the phosphorescent material directly into the paper. Mixed



Beavers starts the day by raising the flag; one of them flies outside every post office across the United States.



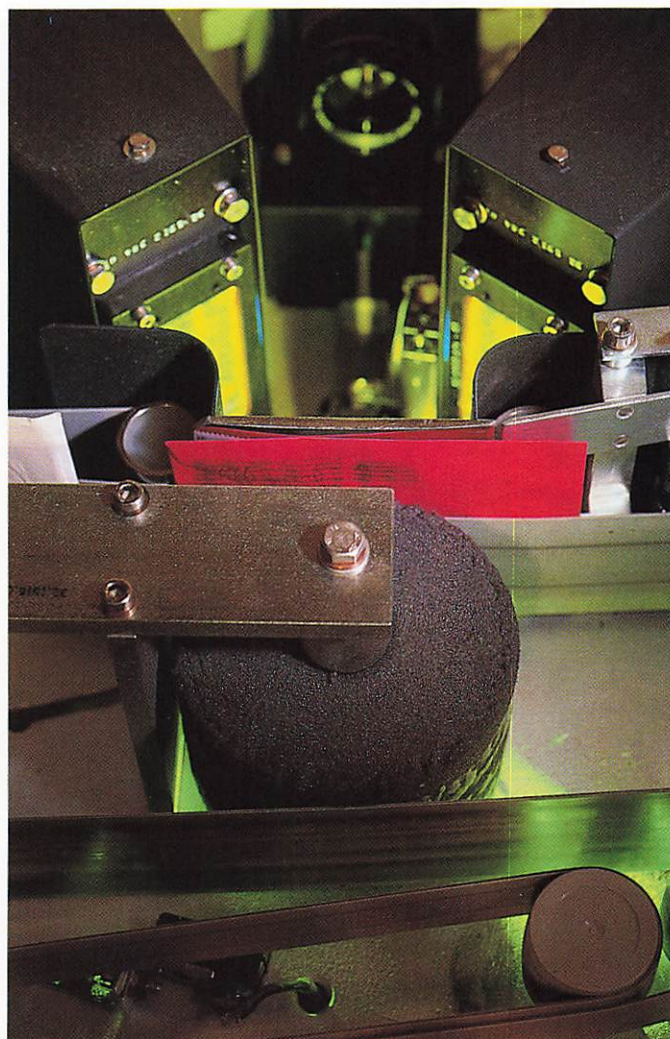
Inside, he sorts the daily mail into 217 slots. Betty Hutchison, a part-time clerk, opens a bag behind him.



The red letter goes through a manual machine that cancels the stamp, prints the date, town and ZIP Code.



Through the seeming chaos in this six-acre building, the mail to and from two million people flows each day.



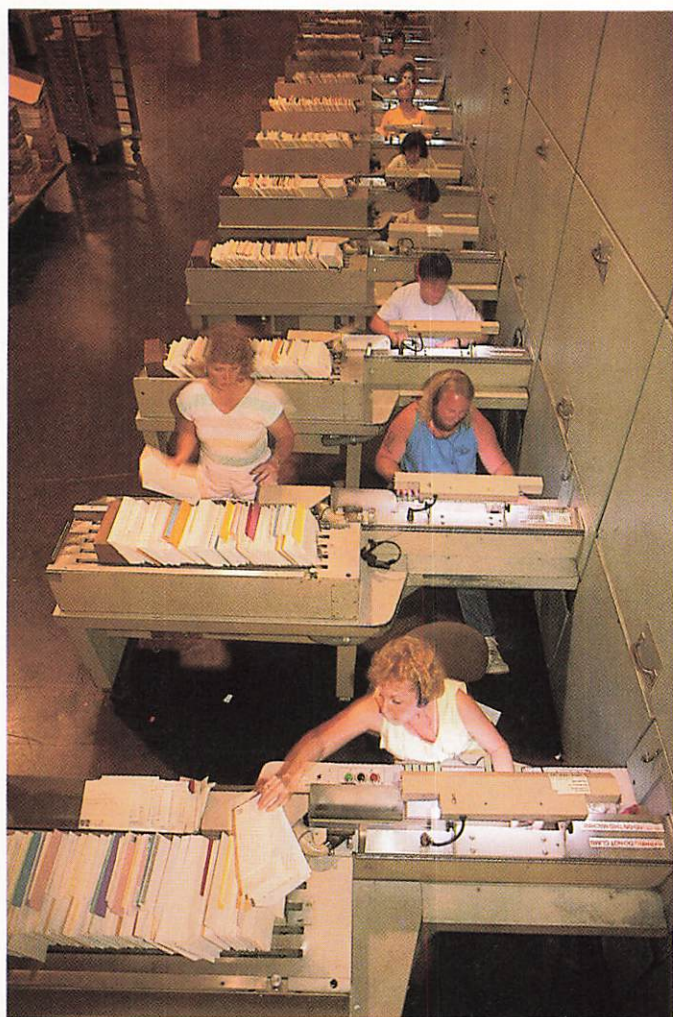
Optical scanner checks city and state against ZIP Code, sprays a bar code used by sorting machines.

and at the same time prints the postmark. Joe Peng also pays a lot of attention to the ink used for canceling because of a form of skulduggery called laundering, a \$50-million-a-year business. Illegal agencies wash the cancel marks off stamps and then use them in highly profitable mailing services for unsuspecting companies. A few years ago, the Postal Service ended one such operation in Chicago—by itself a multimillion-dollar-a-year scam. So for canceling, Peng's laboratory has developed a new ink, the properties of which he will not reveal, that renders such larcenous meddling impossible. "This cannot happen anymore," he says with the happy grin of a man who has achieved revenge.

Once it's canceled—and now canceled for good—the next place a letter goes, and where Everyletter has already gone, is to a vast, long machine called an optical character reader, the first task of which is to

reject a lot of mail: letters with handwritten addresses, for example, that have slipped through the winnowing process. Nothing thicker than a quarter-inch can enter. Some direct-mail envelopes are so fancifully decorated that they obscure the address and confuse the machine; out they go.

Again at a rate of about 30,000 an hour, the letters race by and the machine instantaneously reads the ZIP Code, the city and state, checking one against the other in its electronic registry. If they check out, it sprays a bar code—small vertical gray lines—on the envelope. Then, a bar-code sorter shunts each letter off into one of 96 or so bins, each bin for a different destination. One bin could be for Ohio, another for a place as little as my town, all depending on the needs of the hour. New multiline optical character readers are already being put in place; they can read an entire address and



People read addresses that machines can't, hit first three numbers of ZIP; letter is whisked to correct bin.

spray forth a bar code that stands for a nine-digit ZIP—in other words, they will have the capacity to sort the mail down to the level of exactly what goes into some distant mail carrier's bag. The advantage? Money, of course, in terms of limiting the number of times a human hand touches a piece of mail, but the major advantage is time. "We are always fighting the hours," says Jim Gillespie.

Had Everyletter not made it through the optical character reader for one sin or another, it would have been delivered as part of a great heap to a letter-sorting machine. While clever, this apparatus is comparatively low-tech, needing many humans to make it function. Twelve people sit at consoles while the mail goes past at a rate of one piece per second, a separate stream for each console. The people read ZIP Codes and key them in (the first three numbers usually suffice), and the machine, taking it from there, whisks the



So far, so good: mail for Albuquerque is bagged and ready. Bar code gives the airline, flight number.

letters off to appropriate bins. On a six-acre work floor that seems as impersonal and anonymous as a parade ground, it is the operators of these consoles who are allowed to personalize their space. One array of consoles was labeled "Dream Machine." Some of the operators wear headphones tuned to one of three radio stations to drown out the noise. Periodically each operator is relieved, the reliever gliding into the seat with balletic grace, rarely missing a letter in the process.

But of course, letters do get missed. On the other side of the machine, where the bins are, one finds bins labeled "Nixies" and "Doubles." Doubles are when two envelopes get tangled up together. Nixies are letters the operators couldn't read. Gillespie pulled out a Nixie at random. It had a barely transparent window under which the address looked like a smudge. He shook his head with the air of a schoolteacher presiding over a class of slow learners. "It's amazing what



MYTHOLOGY

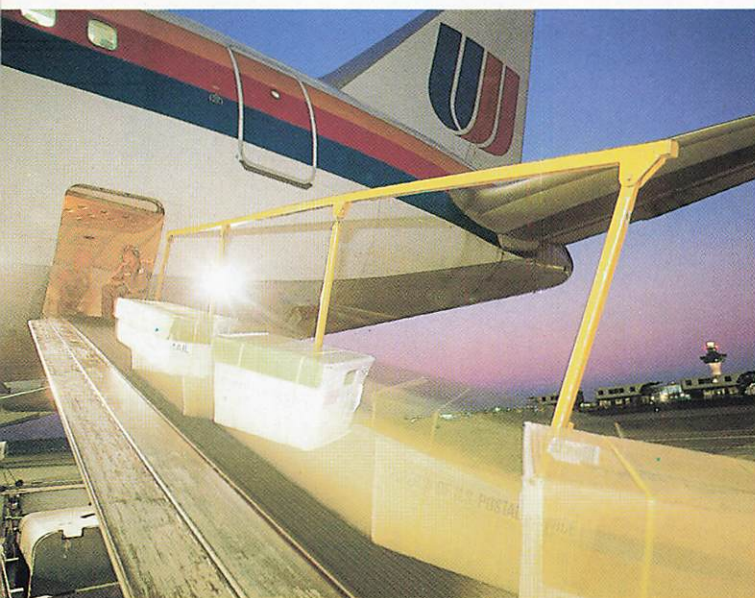
If you've been drinking a fine blended scotch like Chivas, Black Label, or Pinch, the idea that there's something even smoother, something even more distinctive, sounds like pure fantasy.



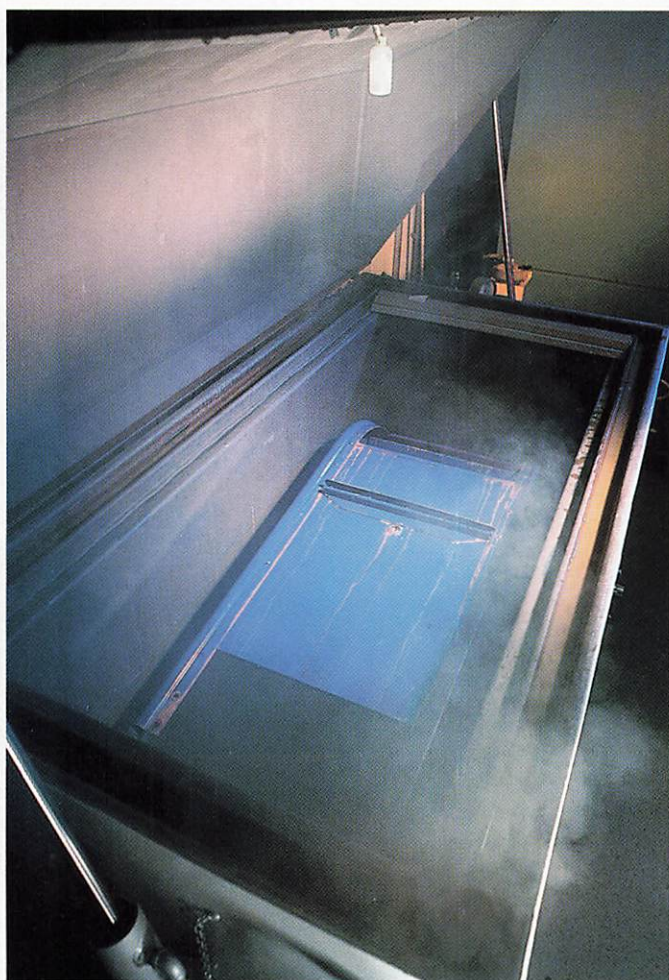
REALITY

But there is something smoother. Something more distinctive. Glenfiddich. The pure malt scotch that isn't blended with grain whiskies. Just try it once. And you'll find mythology is reality.

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More mail for Albuquerque rides up into the hold of an airliner at Dulles airport in Northern Virginia.



In chamber that looks like a coffin, postbox is bathed in salt steam to find out how it resists corrosion.

people—even large mailers—put in the mails,” he said.

Once a letter has achieved the shameful status of Nixie, there is nothing for it but handwork. It is sent elsewhere and painstakingly handsorted, a process that will almost certainly add a day, if not two, to its journey. (A letter that comes in uncanceled and has to be routed first to the canceling machine can lose three hours for the extra step. This delay can mean it will miss its flight and thus will lose a whole day.) On occasion you will find a Day-Glo dot affixed to a letter you receive. This signifies that it was a Nixie.

The hidden meanings of those colored dots

After the mail has been sorted, the clerks put it into bundles; on the top envelope they stick another kind of colored dot. A bright pink dot imprinted with the letter A means that this bundle can go to, say, Buffalo, and more specifically to ZIP Codes 140 through 149. An orange D means that the bundle is for one five-digit ZIP Code; a green 3 means a single sectional-center facility; a blue F indicates that it goes to a single business address.

No matter how it is sorted—by hand or machine—a letter is collected by hand from the bins and winds up in a bag or on large trays. Cost-effective ways of mechanizing these steps remain elusive. Every letter went into a bag that was earmarked for Albuquerque by means of a black-and-white label bearing the letters ABQ, just like a baggage-claim ticket, and a large, bold bar code that indicated what flight of which airline would carry it. This bar code was read automatically while the bag was weighed, thus letting the Postal Service know what it owed the airline. Most U.S. mail is contracted out to commercial airlines, so one’s letter is subject to the same vagaries that affect any airline passenger or piece of luggage. The Postal Service pays nearly a billion dollars a year to commercial airlines for carrying the mail, and recently it contracted with Evergreen International Airlines, a private air-cargo service, to provide a network linking 23 cities exclusively for the delivery of mail. The new system uses Terre Haute, Indiana, as its hub. It won’t replace nighttime commercial airline transport of the mails, but it will augment it, and provide added flexibility and control in scheduling.

The schedule went well for Everyletter. Twenty-four hours after it was mailed it was in Albuquerque, somewhere on the floor of a far-smaller counterpart of the Northern Virginia Management Sectional Center. (More people live in the Virginia suburbs of Washington than in all of New Mexico.) Once again that evening, on Tour One—the shift that begins at 10 P.M.—my letter went through a bar-code sorter and was automatically whisked into a bin labeled 235.



**THE FIRST THING
TO DRY AFTER THE STORM
SHOULD BE THE INK ON THE
INSURANCE CHECK.**


When baseball-size hail, high winds and rain hammered Abilene, Texas on June 2nd, the Allstate Catastrophe Team was there within hours.

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After a day in transit, the author's letter arrives in Albuquerque, where Romero puts it in correct slot.

Eventually someone collected the mail from bin 235 and wheeled it on a gurney into a large room off the main floor. Around the walls were 24 stations, three-sided carrels lined with mail slots, each slot corresponding to an address. One of these stations was labeled 235, the route of a letter carrier named Kathy Romero. One of the slots at her station corresponded to the address of my friend.

At about 5 in the morning, Kathy Romero's supervisor, Ricardo Valenzuela, arrived and surveyed the great pile in the middle of the room, gauging its amount and determining if extra hands might be needed. "It's like a game every day," he said. "We have to have the strategy and timing to win."

At 6, Romero arrived along with the other carriers. The mail for her route, all arranged in cardboard trays, was wheeled over to her station. She proceeded to sort it into 500 slots, about ten running feet of mail (which is two-thirds of the average daily amount that arrives in my post office in Virginia). Romero is a soft-spoken, diminutive woman and she finds the two or three hours of sorting the mail "a sociable time." There is a good deal of friendly chatter among the carriers around the perimeter of the room.

Nearby, a man was staring thoughtfully at an empty station. He was Joey Gutierrez, formerly a letter carrier, now on special duty to work out a new route. It is an art: even computers have trouble finding the shortest route for a traveling salesman. Gutierrez was analyzing the geography, looking for an efficient order of stops. As part of the job, he would have to sell people along the new route on the idea of Neighborhood Delivery and Collection Box Units, a cluster of mailboxes mounted on a pedestal anchored outdoors on the sidewalk. They can cut hours of delivery time, thus expanding a carrier's route, he explained, "but they



Romero loads for a day of "park and loop": lock her van, walk up one side of the street, down the other.

also are best for security. They're locked so no one can take away anyone's checks or food stamps." He talked of the "sanctity of the mails."

By 9, Kathy Romero was nearly finished sorting her mail. She held up an envelope and pointed to the address. "The suite number is wrong on this. I know; I've been on this route three years. Technically, I could return this to the sender, but what good would that do? Just slow things down." It went into a slot.

Shortly after, she pulled all the mail from the slots, put it in cardboard trays, loaded it on a gurney and wheeled it outside to a parking lot where her vehicle, a squarish white van, sat waiting. It is called a Long-life Vehicle and Romero doesn't like it much. "I'd gotten used to my Jeep. This thing is so big," she said. "I suppose I'll get used to it."

Back in the Engineering Support Center, they have a few Long-life Vehicles in stock. The center's administrative manager, John Hunter, had showed me how they were working on the air-circulation system; at the time, hot air from the engine was blowing right into the driver's face. Also, for security purposes, there is no back window. That means the carrier in the driver's seat can't see if a child is standing or has fallen directly behind the truck. So the center's engineers were working up the specifications for an additional rear-view mirror that would become standard equipment.

Out on the streets of Albuquerque in her Long-life Vehicle, Romero explained that, over all, her route is about ten miles long and that she does half of it on foot. There is just one "mounted stop," meaning a place where she only needs to drive up and lean out the window to deliver the mail. For all the rest, she drives to a strategic spot, stops, takes the mail out and locks the truck. Then it's up one side of the street, down the other and back into the truck. In most cases,

she has to walk up a path to the houses: "I don't ever cut across people's lawns." When she got to one of the few cluster boxes on her route, it took only 45 seconds to deliver the mail for ten people. (The engineers back in Merrifield torture each model of these cluster boxes, putting them in showers to see if the mail stays dry. They spray salt water on the familiar, blue postboxes and subject them to desertlike heat. They set fire to various types of private mailboxes. All such efforts are to see if the equipment is worthy of approval by the U.S. Postmaster General. No mail will be delivered to a box that has not received this approval.)

Along Romero's route, a local hairdresser waved from his car, shouting to remind her of her appointment later that day. Everyone was happy to see her.

"You get to know quite a bit about the people on your route," she said. "I know when someone's having trouble paying the bills, when there's a divorce, a death. One couple shares a birthday. They get such a big stack of mail that day that they're almost embarrassed. And we keep track of old people, or sick people. If someone doesn't collect their mail for a few

days, I tell my supervisor and he has someone check and see if they're OK."

Romero spoke of the worst things that can happen to a letter carrier. One is a traffic accident. Even a near accident gives her nightmares. Another item on the horror list is being attacked by a dog. (The Postal Service keeps track of such things: in 1987, there were 3,346 letter carriers attacked by dogs.) Kathy Romero is never without her standard-issue can of Halt (cayenne pepper in a mineral water solution), "a lifesaver," she said.

An unhappy customer is a minor tragedy in her life. "A lot of people get very upset if you put someone else's mail in their box," she explained.

Having begun at 6 and having hit the streets at 9:30, Kathy Romero would finish her route some time around 3. As it turned out, Everyletter arrived at its address at 11:05, a day early. After being sucked into the great vortex at Merrifield, then winnowed out of the maelstrom, it emerged from the ceaseless, omnidirectional migration of the mails, reaching its destination in 42 hours 35 minutes.

It cost a quarter.

A full day early, the red letter from Waterford is tucked safely into the proper mailbox in Albuquerque.



IS YOUR PHONE SYSTEM FLAT-OUT CONFUSING?

